Leak Detection and Action Repair Plan

Site	Maesydd AD facility
Site Permit number	AB3791FG
Permit Holder	Maesydd Biogas Ltd

Potential Emissions from a Leak

- Digestate Spill: A spill of digestate out of the bunded site causing contamination of local water sources.
- Methane emissions: Leaking into the atmosphere.

Leak Detection Points

As per the Site map (Appendix 1):

- Digester tank
- Gas Membrane
- Exterior Gas Pipeline & Seals
- Pressure Release Valve
- Feed system
- CHP engine, container and associated pipework
- Silage Clamp and concrete

Leak Detection Plan and Action Plan

Digester Tank		
	Digester 1	**Daily visual inspection**- check tank leak inspection pots. Check noted on the daily inspection sheet reference Any leaks remedy immediately, using Spill plan reference
Double Membrane		
	The Digester has a gas collection membrane & weatherproof membrane	**Daily visual inspection**- turgidity of gas membrane roof and **odour (sniff) test**. Check noted on the daily inspection sheet reference Use Odour plan check sheet reference
Exterior Gas Pipeline & Seals		
		Daily site inspection with gas detection handheld equipment and are worn at all times by AD Operators on site:

		  Check noted on the daily inspection sheet reference Any leaks remedy immediately, using Spill plan reference:
Pressure release valves		
	Digester 1	**Monitor pressure levels on Scada system** and ensure pressure is below 5mbar by AD Operator. Pressure reading over this will result in biogas emissions. In event of an over pressure emission stop feeding until normal pressure readings. Check noted on the daily inspection sheet reference:
Feed system		

		Daily visual inspection- check feed system for visual leaks. Check noted on the daily inspection sheet reference:
CHP Engines		
	Containers & associated pipework	**Daily Checks** – by AD Operator must be conducted and recorded in the CHP Daily Check sheets. **Fre-Energy perform remote monitoring and have weekly visits** to site to perform maintenance and to monitor the site. Fre- energy have installed sensors in each CHP container that measure any emissions in the containers and notify both the AD Operator (through the alarm system) and Fre-Energy if any emissions are found. In addition, yearly Stack tests are conducted by an MCERT assessor, the reports are sent to the EA.
Silage Clamp and concrete		
		Daily Visual Inspection - inspected daily for any signs of wear, damage, or corrosion. Check noted on the daily inspection sheet reference: Any faults or deficiencies identified during inspections must be assessed promptly by functional testing of clamps to ensure they are operating correctly. If any faults are found the issues must be resolved promptly. All maintenance activities must be recorded in the Maintenance plan& Records file: AD/Control Room/Maintenance File/**Maintenance Plan & Records**

Appendix 1: Site Map